

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

_____)	
SKYLINE SOFTWARE SYSTEMS, INC.,)	
Plaintiff,)	
)	
v.)	CIVIL ACTION NO. 04-11129-DPW
)	
KEYHOLE, INC. and)	
GOOGLE, INC.,)	
Defendants.)	
_____)	

**PLAINTIFF SKYLINE SOFTWARE SYSTEMS, INC.'S
OPENING CLAIM CONSTRUCTION BRIEF**

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The purpose of this claim construction exercise is to construe the disputed claims terms found in any of the claims of the patent-in-suit *other than* Claims 1 and 12. As the Court is well aware, the parties fully brief and argued all of the relevant claim construction issues with respect to Claims 1 and 12 in April 2005. Thereafter, the Court issued a 40-page Memorandum and Order deciding these issues in March 2006. A year and a half after the parties identified and briefed all disputed issues with respect to Claims 1 and 12, Defendants Keyhole, Inc. and Google Inc. (“Google”) have now identified for construction numerous claim terms and phrases found in Claims 1 and 12, as well as in the remaining claims of the patent-in-suit. Google’s identification of these terms is a blatant attempt to do an end-run around the Court’s previous claim construction ruling dated March 24, 2006 (“Claim Construction Order”). There was no dispute as to the meaning of these terms with respect to Claims 1 and 12, and there is no genuine dispute as to the meaning of these same terms when they appear in claims other than Claims 1 and 12. The Court should reject Google’s request to re-define the scope and meaning of Claims 1 and 12.

With respect to the disputed claim terms that do not appear in Claims 1 and 12 and were not the subject of the Court’s prior Claim Construction Order, Google: (1) ignores the express language of the patent claims; (2) attempts to add extraneous limitations from the specification into the claims; or (3) violates the principle of claim differentiation, which provides that different patent claims have a different scope. Attached as Exhibit A to the supporting Declaration of Geri L. Haight is a chart comparing the definitions proposed by both parties for the dispute claim terms.¹

RELEVANT FACTS

¹ All exhibits cited in this memorandum are attached to the Haight Declaration.

U. S. Patent No. 6,496,189 relates generally to methods and apparatus for streaming terrain data from a remote computer to a local computer, typically in what is known as a client-server environment. Google markets and sells a suite of products generally referred to as “Google Earth,” which provide the user with the ability to download, display, and navigate through three dimensional (3D) terrain data. Google’s products utilize methods and an apparatus claimed in the ‘189 Patent to stream the terrain data from the server over the Internet and to be rendered on the user’s computer. There is no genuine dispute that Google Earth practices virtually every aspect of the methods claimed in the ‘189 Patent. The issue is whether Google can impose new and additional elements not found in any of the patent claims as a way of attempting to avoid infringement.

A. Skyline’s Patent Solved A Long-Standing Problem in the Art.

The ‘189 Patent describes methods and apparatus for: (1) streaming and presenting large volumes of data particularly over a low speed communication link (such as over the Internet via a modem); (2) providing an interactive experience for the user, including the ability to select a path over terrain; and (3) selecting the perspective and resolution or distance of the viewer from the terrain. Exh. B (‘189 Patent, col. 2, lns. 1-22, col. 6, lns. 49-50, 58-59, col. 8, lns. 1-5). An important aspect of the invention claimed in the ‘189 Patent is a method for providing data blocks describing a 3D terrain from a remote server to a client over a publicly available network, such as the Internet, in an interactive and efficient manner. The data blocks are used for 3D visualization of the terrain on the client machine.

In the prior art, certain methods were known for displaying two-dimensional (2D) and 3D terrains from data stored locally on the client computer. Skyline’s invention provided a method to render very large databases, those that do not fit in local memory or on local disks of

the client machine, by streaming both 2D and 3D data as requested from a remote server. Such databases can be accessed remotely by multiple, simultaneous users using client software and hardware. The data describing the 3D terrain could then be downloaded or streamed, when and as needed during a session, to the client computer. The invention of the '189 Patent relied on the delivery of the needed data blocks describing the 3D terrain to better utilize the limited bandwidth of the communication link between the client and the remote server, such as the public Internet, and to provide interactive rendering performance on the client computer. The terrain data needed to provide this 3D visualization may correspond to aerial or satellite photographs, elevation data, and other terrain features.

The problems encountered in this context related to the real-time transmission of appropriate terrain data over server-client communication lines, the storage of some portion of the data on the local computer as called for, and the methods for organizing and streaming the 3D terrain, as needed, in an efficient, run-time manner. The '189 Patent solved this problem through a method, which includes appropriate representation of the dataset using a multi-resolution hierarchy of the data on the server and optimizes the ordering of 2D and 3D terrain data blocks, which enabled the use of even a low bandwidth communication link (*e.g.*, 33.6Kb/sec). This method enabled the storage of massive amounts of data describing 3D terrain on a remote server in a succession of resolution levels and organized in a hierarchical manner, which is downloaded incrementally in lower to higher resolution representations, as the data is needed. The method described in '189 Patent made it possible to visualize large terrains on commodity personal computer (PC) systems, which are used by millions of potential users. For example, the '189 Patent discloses the use of a "low speed communication link" and for transferring the data blocks via the "Internet." Exh. B ('189 Patent, col. 5, ll. 15-19; *see also id.*,

col. 7, ll. 62-67; col. 8, ll. 1-14). The '189 Patent also describes a computer system using a standard commodity processor, such as an Intel Pentium CPU. The resulting computer system employed a modem, for example, a standard 33.6 Kb/sec modem communicating with the server "over a public network, such as the Internet." *Id.*, col. 7, ll. 65-67; col. 8, lns. 1-11.

C. The Accused Products

Google Earth allows users to view a database of images and terrain information which Google maintains which covers the surface of the earth. The images the user sees are meant to approximate what would be seen from an airplane flying above the Earth's surface. Google Earth also allows users to do text searches for places, for example: "195 School St., Waltham, MA," and view images of the place searched for and the addresses of businesses located there. Google distributes one version of Google Earth for free, and sells other versions which have more features. The internal operation of Google Earth closely resembles what is described in the '189 Patent.

Google Earth was originally developed by a startup company called Keyhole, which was acquired by Google. Prior to the acquisition, Keyhole released a product with functionality similar to that of the present Google Earth under the name "Keyhole 2.0." There exists no genuine dispute that Google Earth employs virtually all of the methods and apparatus claims in the '189 Patent, including the ability to utilize a low bandwidth network connection by organizing the data through a succession of resolution levels and displaying a lower resolution data block while higher resolution data is requested. Defendants attempt to avoid infringement now by seeking to add a number of limitations to the patent claims that find no support in the claim language or the patent itself.

D. The Asserted Claims

In addition to Claim 1 and 12, which were the subject of the Court's initial Claim Construction Order, Skyline has asserted Claims 2-11 and 13-24 of the '189 Patent against Google.² On June 30, 2006, Google identified approximately 25 claim terms and phrase in dispute contained in Claims 2, 3, 7, 8, 9, 11, 13, 14, 16, 18, 19, 21 and 22. Exh. C (Google's Proposed Claim Construction). On July 14, 2006, Skyline provided Google with its proposed claim constructions for the disputed claim terms and phrases. Exh. D (Skyline's Proposed Claim Construction). Through a series of discussions between counsel, the parties were able to narrow the disputed claim terms considerably. Exhs. E-F (Emails exchanged between C. Chang, Esq. and G. Haight dated Sept. 13 and 28, 2006).

The remaining claim terms to be interpreted by the Court largely fall into three categories: (1) claim terms that are common throughout the claims, including Claims 1 and 12 (the construction of which is unnecessary and redundant in light of the Court's March 24, 2006 Claim Construction Order); (2) claim terms appears only in a single claim ("succession of resolution levels," and "plurality of coordinates ..."); and (3) claim terms appearing in Claim 7 and claims dependent therefrom. Each is addressed in detail below.

CLAIM CONSTRUCTION LAW

A patent has "two distinct elements" – the specification and the claims. *Markman v. Westview Instr., Inc.*, 517 U.S. 370, 373 (1996). The purpose of the specification is to "describe the invention 'in such full, clear, concise and exact terms as to enable any person skilled in the art ... to make and use the same.'" *Markman v. Westview Instr., Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370. The purpose of the claims is to "define the invention to which the patentee is entitled the right to exclude." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d at 1111, 1115 (Fed Cir. 2004).

² Skyline asserted these claims in a Complaint filed on June 5, 2006. See Docket No. 1 (Civ. Action No. 06-10980).

“To ascertain the meaning of claims, [courts] consider three sources: the claims, the specification, and the prosecution history.” *Markman*, 52 F.3d at 979. This “intrinsic record” is the most important source of evidence in claim construction. *See, e.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005); *V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d 701, 706 (Fed. Cir. 2005). “The touchstone for discerning the usage of claim language is the understanding of those terms among artisans of ordinary skill in the relevant art at the time of invention.”³ *Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1355 (Fed. Cir. 2004). “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Phillips*, 415 F.3d at 1313.

Using the specification to interpret the claims is not to be confused with adding an extraneous limitation appearing in the specification to the claims, which is improper. By “extraneous,” the Federal Circuit means a limitation read into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim. *E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988). However, the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms. For instance, although the specification often describes very specific embodiments of the invention, the Federal Circuit has repeatedly warned against confining the claims to those embodiments. *See, e.g., Nazomi Communications, Inc. v. ARM Holdings, PLC*, 403 F.3d 1364, 1369 (Fed. Cir. 2005) (claims may embrace “different subject matter than is illustrated in the specific

³ A person of ordinary skill in the art relevant to the subject matter claimed in the ‘189 Patent would have possessed a bachelor’s degree in computer science, mathematics or electrical engineering (or similar field) and possibly a two or more years of experience in the field of software development for client-server applications and data structures.

embodiments in the specification”); *Liebel-Flarsheim*, 358 F.3d at 906-08; *Teleflex*, 299 F.3d at 1327; *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985). In particular, the Federal Circuit has expressly rejected the contention that, if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. *Gemstar-TV Guide*, 383 F.3d at 1366. As the Federal Circuit noted:

[a]n accused infringer [cannot] ... narrow a claim term’s ordinary meaning ... simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history. Indeed ...case law makes clear that a patentee need not ‘describe in the specification every conceivable and possible future embodiment of his invention.’

CCS Fitness, Inc., 288 F.3d at 1366-67 (citations omitted); *see also Axcelis Technologies, Inc. v. Applied Materials, Inc.*, 2002 WL 3161283, * 2 (D. Mass. Dec. 10, 2002) (Woodlock, J.). Thus, the patent claims are not limited in scope to particular embodiments disclosed in the patent. *See Texas Instruments, Inc. v. U.S. Int’l Trade Comm’n*, 805 F.2d 1558, 1563 (Fed. Cir. 1986).

To avoid importing limitations from the specification into the claims, it is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so. *See Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1533 (Fed. Cir. 1987). As the Federal Circuit stated in *Phillips*:

One of the best ways to teach a person of ordinary skill in the art how to make and use the invention is to provide an example of how to practice the invention in a particular case. Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive.

Phillips, 415 F.3d at 1323; *see also SciMed Life Sys.*, 242 F.3d at 1341.

The Federal Circuit has frequently stated that the words of a claim “are generally given

their ordinary and customary meaning.” *Vitronics*, 90 F.3d at 1582; *see also Toro Co. v. White Consol. Indus., Inc.*, 199 F.3d 1295, 1299 (Fed. Cir. 1999); *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). “Ordinary and customary meaning” of a claim term is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313.

Against this background of legal principles, Skyline addresses Google’s common misinterpretations below. In general, Google asks the Court to re-interpret claim terms that appear in Claims 1 and 12 and were already the subject of extensive briefing, argument and a written decision by this Court. The Court should flatly reject Google’s attempt to do an end-run around this Court’s prior claim construction ruling. With respect to the disputed claim terms that do not appear in Claims 1 and 12 and were not the subject of the Court’s prior claim construction ruling, Google: (1) ignores the express language of the patent claims; (2) attempts to add extraneous limitations from the specification into the claims; or (3) avoids the concept of claim differentiation, which states that patent claims should be construed to cover different inventions.

A. The Court Need Not Construe Claim Terms That Appear In Claims 1 and 12, As The Scope And Meaning Of Those Claims Has Already Been Decided By The Court.

Some of the claim phrases identified by Google as requiring construction are found in several asserted claims. Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim is often the same as the meaning of the same term in other claims. *See Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001); *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159 (Fed. Cir. 1997).

1. **“downloading” and “downloading ...if the provided block from local memory is not at the indicated resolution level”**

The terms “downloading” and “downloading [or “downloads”] ... if the provided block from local memory is not at the indicated resolution level” are found in Claims 2, 3, 7, 8, 9, 11, 13, 14, 16, 18, 19, 21 and 22. They are also found, however, in Claims 1 and 12. A dispute with respect to the meaning and scope of any disputed claim terms found in these Claims has already been decided by the Court in its March 24, 2006 Claim Construction Order. Exh. G (Claim Construction Order). Notably, before now, Google never contended that the terms “downloading” or “downloading [or “downloads”] ... if the provided block from local memory is not at the indicated resolution level” were in any way ambiguous, and did not previously request that the Court construe these terms independently. As such, Court’s construction of these terms at this stage of the litigation is not only unnecessary; it has the potential to alter the previously decided scope of Claims 1 and 12 -- on which fact and expert discovery have both been complete. The Court should flatly reject Google’s attempt to do an end-run around the Court’s prior Claim Construction Order.

2. *“receiving from the renderer” and “providing the renderer”*

Google now asks the Court construe the claim terms “receiving from the renderer” and “providing to the renderer.”⁴ As with “downloading” above, however, these claim phrases are also found in Claims 1 and 12. Any dispute with respect to the meaning and scope of Claims 1 and 12 has already been decided by this Court in its March 24, 2006 Claim Construction Order.

In fact, the Court has already defined the term “renderer” in its previous Claim Construction Order and this definition leaves no dispute as to the meaning of “receiving from the renderer” and “providing to the renderer.” The term “renderer” appears in both Claims 1 and 12. For example, Claim 1 provides:

⁴ These claim phrase appear in Claims 1 and 12, as well as Claims 3, 7, 8, 9, 11, 13, 14, 16, 18, 19, 21 and 22.

A method of providing data blocks describing three-dimensional terrain to a renderer, the data blocks belonging to a hierarchical structure which includes blocks at a plurality of different resolution levels, the method comprising:

receiving from the renderer one or more coordinates in the terrain along with indication of a respective resolution level;

providing the renderer with a first data block which includes data corresponding to the one or more coordinates, from a local memory;

downloading from a remote server one or more additional data blocks at a resolution level higher than the resolution level of the first block which include data corresponding to the one or more coordinates if the provided block from the local memory is not at the indicated resolution level.

Exh. B ('189 Patent, col. 16, lns. 28-44); *see also id.*, col. 18, lns. 12-30.

In its March 24, 2006 Order, the Court defined “renderer” as follows:

Software and/or hardware object that performs at least the following functions: (1) determining and *providing to* another object the required coordinates in the terrain along with a respective resolution level; (2) *receiving* the data blocks corresponding to the specific coordinates; and (3) using the received data blocks to display a three-dimensional image.

Exh. G (Claim Construction Order at 26-32) (emphasis added). In providing this construction, the Court went to great lengths to articulate the functions and attributes of the renderer. Google should not be permitted to get a second bite at the apple now as to the meaning of this term.

Again, before now, Google never asserted that the meaning of these claim phrases were ambiguous, nor did it previously request that the Court construe these terms independently. The Court’s construction at this stage of the litigation is unnecessary and has the potential to alter the previously decided scope of Claims 1 and 12. The Court should flatly reject Google’s attempt to do an end-run around the Court’s prior Claim Construction Order.

B. Skyline’s Proposed Definitions Are Consistent With How The Terms Are Used In The Claims And With Their Plain And Ordinary Meaning To One Skilled In The Art.

Skyline’s proposed definitions of the disputed claims terms are entirely consistent both with how the terms are used in the claims themselves and with the plain and ordinary meaning of the terms as understood by one of skill in the art at the time of the invention. Google’s proposed definitions, on the other hand, attempt improperly to narrow the claims by importing limitations from the specification into the claims. As discussed below, the claims are not limited in scope to the particular embodiments disclosed in the ‘189 Patent.

1. “succession of resolution levels”

The phrase “succession of resolution levels” appears in Claim 2 of the ‘189 Patent, which provides as follows:

A method according to claim 1, wherein downloading the one or more additional data blocks comprises downloading the blocks from a **succession of resolution levels**, from the level immediately higher than the resolution level of the first block up to the maximal existent resolution level on the server not above the indicated resolution level.⁵

Exh. B (‘189 Patent, col. 16, lns. 44-49) (emphasis added). There is no ambiguity to the meaning of the phrase “succession of resolution levels.” One of ordinary skill in the art in 1999 reading the ‘189 Patent would have understood data blocks from the “succession of resolution levels” to refer to the resolution levels of the data as it is stored in the database. *See* Declaration of Dinesh Manocha, Ph.D. (“Manocha Decl.”), ¶¶12-17; Exh. B (‘189 Patent, col. 8, lns. 6-9;

⁵ Claim 1, which the Court has previously construed in its March 24, 2006 Claim Construction Order, provides as follows:

A method of providing data blocks describing three-dimensional terrain to a renderer, the **data blocks belonging to a hierarchical structure** which includes blocks at a plurality of different resolution levels, the method comprising: receiving from the renderer one or more coordinates in the terrain along with indication of a respective resolution level; providing the renderer with a first data block which includes data corresponding to the one or more coordinates, from a local memory; downloading from a remote server one or more additional data blocks at a resolution level higher than the resolution level of the first block which include data corresponding to the one or more coordinates if the provided block from the local memory is not at the indicated resolution level.

Exh. B (‘189 Patent, col. 16, lns. 28-43) (emphasis added).

col. 9, lns. 1-21). The term refers, in a straightforward manner then, to downloading data from the various resolution levels in the database.

Google tries to complicate this otherwise unambiguous claim language by attempting to improperly insert limitations not found in the claim. Google urges the Court to construe this phrase as “in order of increasing resolution.” Exh. C (Google’s Proposed Claim Construction). There is no support in the intrinsic record for Google’s added limitation of “order” into this claim. The context of Claim 2 conveys that the resolution levels between those indicated levels are downloaded. The plain and ordinary claim language requires downloading data blocks whose resolutions lie between the level immediately higher and the set maximum level. No particular order is required. Due to the complexities inherent in downloading data over a network such as the Internet, the claim does not require that it take place strictly in a lowest to highest resolution order.

In particular, Google seeks to combine a new construction of “downloading” with an overly limited construction of “succession of resolution levels” so that the claim phrase “downloading the blocks from a succession of resolution levels” becomes something much more narrow. The resulting construction proposed by Google, then, appears to be: “requesting area network and receiving in local memory from a separate computer data blocks in order of successive resolution levels.” This convoluted provision would require that the system request data blocks in order of successive resolution levels and receive those data blocks in local memory in that same order. This interpretation is not supported by the intrinsic evidence and is directly contrary to how one of ordinary skill in the art at the time of the filing of the patent application would have understood this phrase.

As described more fully in the Declaration of Dinesh Manocha, Ph.D., there are numerous reasons for why data blocks need not be returned to the client “in order of increasing succession,” as Google proposes.⁶ For example, when a client computer program makes requests to a server over the Internet, it is common for the client to make two requests (“Request A” and “Request B”) in order. However, the server’s response to those requests are on occasion returned to the client in the opposite order, so that the response to Request B arrives back before the response to Request A. Manocha Decl., ¶¶ 13-16. This out-of-order arrival of responses to requests can occur because the server is multithreaded and the thread handling Request A completes its task after the thread handling Request B, or if the server consists of multiple computers. *Id.* In such a scenario, Request A is sent to one computer while Request B is sent to another computer that may be less heavily loaded than the computer to which Request A is sent or which, for some other reason, manages to respond to the request more quickly. *Id.*

Alternatively, because of the manner in which packets of information are delivered over the Internet, certain data may take longer to be delivered than other data. This operation of the Internet, however, does not alter the method of the ‘189 Patent, which requests data blocks by utilizing the multi-resolution data is the server to maximize the viewer experience and ability to send data over a low-bandwidth network connection.

One analogy to this reordering from daily life is what happens with mail sent via first class mail through the U.S. Postal Service. If a letter is sent on Thursday, and then another is sent on Friday to the same address, the general sequence of the arrival of letters should be that

⁶ As to extrinsic evidence, in *Phillips*, the Federal Circuit reiterated that district courts may “rely on extrinsic evidence, which consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Id.*, 415 F.3d at *10. The court stated that extrinsic evidence may be used to “help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean.” *Id.* at *11.

the letter sent on Thursday would arrive before the letter sent on Friday. This is not always the case, depending on the weather, the speed of the mail carriers on the particular day, the routing used by the U.S. Postal Service, etc. In certain cases, the letter sent on Friday may arrive before the letter sent on Thursday. The same out-of-order phenomenon may occur when requests are made to a server over the Internet.

In this context, one of ordinary skill in the art at the time of the invention would have understood that, in the client-server system operating over the Internet described in the '189 Patent, that responses to requests may arrive out-of-order unless the description expressly conveys otherwise. Manocha Decl., ¶16. As there is no express language requiring "order" in the claim language, one of ordinary skill in the art at the time of the invention would not have understood the claim phrase "succession of resolution levels" to require requesting and receiving in precise order. Rather, the term simply refers to the data as it is stored in the server.

Not only is Google's proposed construction contrary to how one of ordinary skill at the time of the invention would understand that meaning of the phrase "succession of resolution levels," it is also contrary to the specification. Even in the preferred embodiment, such a strict lower-to-higher-resolution system is absent.

Moreover, Google's proposed "in order" limitation further violates the doctrine of claim differentiation. *D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 1574 (Fed. Cir. 1985). Differences among claims is a useful guide in understanding the meaning of particular claim terms. See *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir.1991). Notably here, unlike in Claim 2, Claim 3 expressly specifies an order in which data blocks are to be requested and received. Compare Exh. B ('189 Patent, col. 16, lns. 51-67) to *id.* at lns. 45-50. Thus, Skyline, and its patent prosecution counsel clearly must have determined to expressly require order in

Claim 3, but not in Claim 2. The Federal Circuit has also stated that “[s]ignificant evidence of the scope of a particular claim can be found on review of the other claims.” *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565, 1570 (Fed. Cir. 1983).

Google’s proposed “in order” limitation is improper and should not be imported into Claim 2.

2. ***“plurality of coordinates being included in a plurality of respective distinct blocks”***

The phrase “plurality of coordinates being included in a plurality of respective distinct blocks” appears only in Claim 3 of the ‘189 Patent. Claim 3 provides as follows:

A method of providing data blocks describing three-dimensional terrain to a renderer, the data blocks belonging to a hierarchical structure which includes blocks at a plurality of different resolution levels, the method comprising:
 receiving from the renderer a plurality of coordinates in the terrain along with indication of a respective resolution level;
 said **plurality of coordinates being included in a plurality of respective distinct blocks**;
 providing the renderer with first data block which includes data corresponding to at least some of the plurality of coordinates from a local memory;
 downloading from a remote server one or more additional blocks which include data corresponding to a plurality of respective distinct blocks if the provided block from the local memory is not at the indicated resolution level, wherein blocks of lower resolution levels are downloaded before blocks of higher resolution levels.

Exh. B (‘189 Patent, col. 16, lns. 51-67) (emphasis added). As used in the ‘189 Patent, the Court should construe this phrase to mean: “more than one set of coordinates being described by the data contained in more than one data block.” This claim phrase emphasizes the manner in which the data is organized in data blocks.

In the ‘189 Patent, the user selects a view which the system translates or describes by reference to various coordinates. The data is organized in data blocks of various resolution levels. Exh. B (‘189 Patent, col. 9, lns. 55-66). The data blocks of higher resolution generally

describe one quarter of the area of the next resolution level. Consequently, as stated in Claim 3, four higher resolution data blocks requested from the remote server may describe the same respective area as one lower resolution data block and, therefore, a number of distinct higher resolution data blocks will correspond to the same plurality of coordinates as the one (or at least fewer) lower resolution data blocks.

Google's proposed construction adds ambiguity into the plain claim language. Google asks the Court to construe the phrase "plurality of coordinates being included in a plurality of respective distinct blocks" as "each one of the plural sets of coordinates being included in a separate distinct one of a plurality of data blocks describing three-dimensional terrain." This proposed construction imposes unsupported limitations. To start, Google's construction could be interpreted to require that *all* of the coordinates be included in each and every block -- an absurd result. Or, Google's proposed construction could be interpreted to require that *each* coordinate be in a different block, rather than combined in more than one block. This interpretation defies the common meaning of this phrase. The patent specification makes clear that the first data block (covering a larger area) corresponding to a number of the coordinates, while the several higher resolution distinct data blocks correspond to the same general area. Exh. B ('189 Patent, col. 8, lns. 59-67; col. 9, lns. 1-39).

3. *"when not downloading blocks required by the renderer"*

This disputed claim phrase appears in Claim 7, which provides as follows:

A method of providing data blocks describing three-dimensional terrain to a renderer, the data blocks belonging to a hierarchical structure which includes blocks at a plurality of different resolution levels, the method comprising:

- receiving from the renderer one or more coordinates in the terrain along with indication of a respective resolution level;
- providing the renderer with a first data block which includes data corresponding to the one or more coordinates, from a local memory;
- downloading from a remoter server one or more additional data blocks

which include data corresponding to the one or more coordinates if the provided block from the local memory is not at the indicated resolution level; and downloading from a remote server excess blocks not currently needed by the renderer to fill up the local memory **when not downloading blocks required by the renderer.**

Exh. B ('189 Patent, col. 17, lns. 43-63). Skyline proposes that this claim phrase be construed as “when not downloading data for displaying the scene corresponding to the current view.”

This proposed construction is consistent with the intrinsic evidence.

The '189 Patent claims various steps for determining what data blocks to order, determining if one or more of the blocks are in the local memory and if not ordering the blocks from the remote server and providing the requested blocks from the remote server to the client in several asynchronous operations. The patent describes this use of multiple connections to the server. *Id.*, col. 15, lns. 59-67. When one connection is not in use, it can be used in parallel with the other connection to download data not required to display the current view. This asynchronous process of getting the relevant blocks of data from the server maximizes the efficiency of the system, while enabling the system to operate at interactive rates and as an integrated method. *Id.*, col. 15, lns. 1-46. In such an operation, the multiple threads work in parallel with one another. One thread may be downloading requested blocks in the requested resolution level, while another, if not then needed, to download blocks for the current view, may have started to download blocks around the area of interest in order to be ready should the user decide to change focus. *Id.*

Google proposes that the Court add several extraneous limitations to this claim phrase. It contends that this phrase should mean: “during periods of time when the local computer is not downloading data blocks describing three-dimensional terrain in response to the one or more coordinates provided by the renderer.” Exh. C (Google’s Proposed Claim Constructions). As

described above, the system is multithreaded and asynchronous. Therefore, the “periods of time” limitation makes no sense. The system may be downloading data required to display a requested view and downloading on a second connection, at the same time, data not currently needed in order to fill the cache. Exh. B (‘189 Patent, col. 15, lns. 59-67). In addition, data blocks are almost always ordered “in response” to the view requested by the renderer. The claim addresses a method of expanding the blocks available near or surrounding the current view when not downloading blocks required to render the requested view. These blocks are then available for future views and are downloaded as the network has capacity to downloading data needed for the current frame and for future views. The “in response” limitation, therefore has no relevance.

4. “Internet”

The claim term “Internet”, according to the ordinary meaning of the term to those of skill in the art, means “the publicly accessible world-wide network of that name, which is capable of relaying information via a TCP connection, but not including private networks even if they use internet protocols or have connections to the Internet.”⁷ There is one Internet, just as there is one Harvard University and one Supreme Court of the United States. The very use of the term “the Internet,” rather than “an Internet,” acknowledges that there is just one. Ignoring this fact, Google’s proposed definition sets forth a set of conditions -- “a publicly available network capable of relaying information via Internet Protocol, either alone or in connection with one or more other protocols” – and lets any network meeting those conditions be called “the Internet.” Exh. C (Google’s Proposed Claim Construction).

Claim 8 provides as follows:

⁷ This claim term also appears in Claim 22 and should be construed similarly.

A method according to claim 7, wherein downloading the data blocks comprised downloading the blocks via the **Internet**.

Exh. B ('189 Patent, col. 17, lns. 62-64) (emphasis added). The specification makes clear that Skyline's invention is intended to operate with simple personal computers, such as those used in the home and office, over the publicly available Internet. More specifically, the specification of the '189 Patent provides:

Preferably, the processor connects to the server via a communication link, preferably a *public network, such as the Internet*. Preferably, the data is conveyed by a *standard modem* at sufficient speed for relatively smooth display of the images.

Id., col. 2, lns. 32-37 (emphasis added). The specification further provides:

FIG. 1 is a schematic illustration of a system 18 for displaying real-life terrain images of a flight course, in accordance with a preferred embodiment of the present invention. System 18 preferably comprises a processor 20, such as a *Pentium-Pro MMX processor*, and a display 22, which are used by an end-user to view 3D real-life images of terrain of desired sites. Preferably, system 18 comprises a modem 24 through which processor 20 communicates with a computerized database server 26 of 3D terrain images. Modem 24 is, for example, a *standard 33,600 kb/sec modem, although other modems, faster and slower may also be employed*. Alternatively, other means of connection, such as ISDN connections or direct routers, may be used instead of modem 24. Preferably, processor 20 communicates with server 26 over a *public network, such as the Internet*. Alternatively or additionally, processor 20 communicates with server 26 through a direct communication line. Further alternatively or additionally, processor 20 receives a storage disk 28, such as a CD, from server 26 or from any other distribution source.

Id., col. 1, lns. 61-67; col. 2, lns. 1-14 (emphasis added). Moreover, "Connections 76 are preferably *standard TCP connections* as are known in the art, although any other protocol may be used to form the connection." *Id.*, col. 12, lns. 10-13 (emphasis added); *see also id.*, col. 10, lns. 63-65 ("The blocks are preferably realized as software processes running on a general-purpose microcomputer, although dedicated hardware realizations are also possible.").

The Internet is the network over which home computers normally communicate with business computers (eBay's, for example), and is also a common means for computers in one business to communicate with computers in another business. To communicate "via the Internet," as recited in Claim 1, means that the communication goes over that one Internet. Packets (the units of network communication) pass through that one Internet. Communicating "via the Internet" does not mean simply that the communication goes, as Google contends, over any network which is in some sense publicly accessible, and which uses the Internet protocol. That is like saying that if you go from Harvard Square to Back Bay by driving on Massachusetts Avenue and over the Harvard Bridge, you are driving via the Mass Pike. Massachusetts Avenue is certainly connected to the Mass Pike (analogous to being on a network from which the Internet is accessible), and one drives on Massachusetts Avenue in much the same way that one drives on the Mass Pike (analogous to using the Internet protocols on a private network), but unless a particular trip involves the car actually getting on the Mass Pike, one is still not driving via the Mass Pike.

Consistent with the plain and ordinary meaning of the term "Internet," the Court should define this term as "the publicly accessible world-wide network of that name, which is capable of relaying information via a TCP connection, but not including private networks even if they use internet protocols or have connections to the Internet."

5. *"substantially all of the blocks surrounding a point in the terrain seen from the current viewpoint within a predetermined distance range"*

The claim phrase "substantially all of the blocks surrounding a point in the terrain seen from the current viewpoint within a predetermined distance range" should be construed as "substantially all of the blocks which include data covering terrain which is within a predetermined distance range in one or more directions from either the viewpoint or a point in

the terrain visible from the current viewpoint.”⁸ Exh. D (Skyline’s Proposed Claim Construction). Claim 9 provides as follows:

A method according to claim 7, wherein the renderer renders a view from a current viewpoint, and wherein downloading the excess blocks comprises filling the local memory with substantially all of the blocks surrounding a point in the terrain seen from the current viewpoint within a predetermined distance range.

Exh. B (‘189 Patent, col. 17, lns. 65-67; col. 18, lns. 1-3).

Defendants propose the following construction: “substantially all of the excess blocks describing three-dimensional terrain on all sides (in all directions) out to a pre-established distance boundary around a point in the terrain that is seen from the current viewpoint.” Exh. C (Google’s Proposed Claim Construction). This proposed construction unnecessarily requires that all sides or direction, whereas Skyline’s definition merely requires “one or more directions.” Exh. A (Comparison of Proposed Claim Constructions).

In Skyline’s invention, the data organized in a hierarchical structure generally represents the surface of the Earth, but not the volume of the Earth. The satellite and/or aerial data basically describe the surface of the Earth, with three dimensional data for that surface. This is referred to as a two dimensional manifold. Manocha Decl., ¶26. In that light, the claim refers to expanding the data for a view laterally along the surface in all directions. There is typically no satellite data for the interior of the Earth and the data structures described in the patent (*e.g.*, ‘189 Patent, col. 9, lns. 15-21; Fig. 2) do not describe such a three dimensional collection of data blocks. In contrast, they describe 3D data for the surface of the Earth. *Id.* Defendants’ proposed construction would create an anomalous situation where the claim would not cover the preferred embodiment. A construction that excludes an embodiment is “*rarely, if ever, correct.*” *Dow Chemical Co. v. Sumitomo Chemical Co.*, 257 F.3d 1364, 1378 (Fed. Cir. 2001) (emphasis

⁸ This claim phrase also appears in Claim 19 and should be construed similarly. *See Rexnord Corp.*, 274 F.3d at 1342.

added); *see also Johns Hopkins University v. CellPro, Inc.*, 152 F.3d 1342, 1355 (Fed. Cir. 1998) (“A patent claim should be construed to encompass at least one disclosed embodiment in the written description portion of the patent specification.”); *Modine Mfg. Co. v. United States Int’l Trade Comm’n*, 75 F.3d 1545, 1550 (Fed. Cir. 1996) (“[A] claim interpretation that would exclude the inventor’s device is rarely the correct interpretation.”).

IV. CONCLUSION

For the foregoing reasons, Skyline respectfully requests that the Court adopt its proposed construction of the claim terms and phrases provided above.

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CERTIFICATE OF SERVICE

I hereby certify that this document filed through the ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF) and paper copies will be sent to those indicated as non-registered participants on September 29, 2006.

Geris L. Haight